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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	09/995,303
	Filing Date	11/27/2001
	First Named Inventor	Robert C. Beck
	Art Unit	3763
	Examiner Name	Matthew F. DeSanto
Total Number of Pages in This Submission	Attorney Docket Number	2446

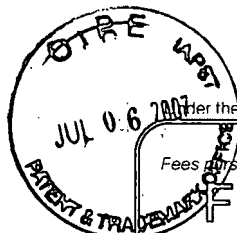
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm Name	BECK & TYSVER, P.L.L.C.		
Signature			
Printed name	Robert C. Beck		
Date	7/3/07	Reg. No.	28,184

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Signature			
Typed or printed name	Mary S. Keller	Date	7-3-07

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# FEE TRANSMITTAL

## For FY 2005

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 250.00

### Complete if Known

Application Number 09/995,303  
Filing Date 11/27/2001  
First Named Inventor Robert C. Beck  
Examiner Name Matthew F. DeSanto  
Art Unit 3763  
Attorney Docket No. 2446

### METHOD OF PAYMENT (check all that apply)

- ☒ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_
- ☒ Deposit Account Deposit Account Number: 500246 Deposit Account Name: Beck & Tysver, P.L.L.C.
- For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)
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### FEE CALCULATION

#### 1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

#### 2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180
<b>Total Claims</b>	<b>Extra Claims</b>	<b>Fee (\$)</b>
_____ - 20 or HP = _____ x _____ = _____		
HP = highest number of total claims paid for, if greater than 20.		
<b>Indep. Claims</b>	<b>Extra Claims</b>	<b>Fee (\$)</b>
_____ - 3 or HP = _____ x _____ = _____		
HP = highest number of independent claims paid for, if greater than 3.		

#### 3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets \_\_\_\_\_ Extra Sheets \_\_\_\_\_ Number of each additional 50 or fraction thereof \_\_\_\_\_ Fee (\$) \_\_\_\_\_ Fee Paid (\$) \_\_\_\_\_

#### 4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Appeal Brief

Fees Paid (\$)

\$250.00

### SUBMITTED BY

Signature Robert C. Beck Registration No. (Attorney/Agent) 28,184 Telephone 612-915-9633  
Name (Print/Type) Robert C. Beck Date 7/3/07

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PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appellants:	<b>Robert C. Beck</b>	Examiner:	<b>Matthew F. DeSanto</b>
Serial No.:	<b>09/995,303</b>	Group Art Unit:	<b>3763</b>
Filing Date:	<b>November 27, 2001</b>	Docket No.:	<b>2446</b>
Title	<b>Interventional Device</b>		

Date of Deposit: 7-3-07

I hereby certify that this paper is being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450

Signature: Mary S. Keller  
Printed Name: Mary S. Keller

**BRIEF ON APPEAL**

Mail Stop AF  
Commissioner for Patents  
Alexandria, VA 22313

Sir:

This Brief on Appeal is filed pursuant to the Notice of Appeal filed 05/03/07 and is an appeal from the Office Action mailed from the U.S. Patent and Trademark Office on 01/03/07 . The fee for filing an appeal brief was transmitted with the notice of appeal. The balance of this appeal is set forth under appropriate headings, as specified by 37. C.F.R. §1.192(c).

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I. REAL PARTY IN INTEREST

The real part in interest is Sprite Solutions, 2256 Hendon Avenue, St. Paul, MN 55108, Assignee of the entire right, title and interest in the subject application, by virtue of an Assignment recorded on January 18, 2005 at Reel 016153, Frame 0099. Sprite Solutions has licensed the patent application to Medrad Inc. of Indianola Pa.

II. RELATED APPEALS AND INTERFERENCES

Appellant, the undersigned Attorney and Assignee are not aware of any related appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIM

Claims 7-9 and 18-24 and 27-30 are pending in the application and they have been finally rejected. A copy of the claims appears in the Appendix of this Brief. These claims were amended in the Amendment filed on 10/05/06 . Claims 1-6, 10-17 and 25-26 were canceled.

IV. STATUS OF AMENDMENTS

No Amendment After Final has been filed.

V. SUMMARY OF INVENTION

The invention is a method of removing particulate debris from a blood vessel. The method is carried out with a catheter has a Coanda effect nozzle that causes an input stream of "primary fluid" to turn a jet from an initial flowing direction to a deflected flowing direction. The method is carried out with a therapy catheter of relatively conventional construction. The use of the Coanda effect is unusual and it should be understood that the Coanda effect occurs when a jet emerges from a "one sided" nozzle, and entrains fluid. When the geometry around the jet is such that entrainment is limited on one side of the jet, then a pressure difference builds across the jet and the jet follows the contour of the wall which causes the jet to turn and flow retrograde. This particular characteristic is a limitation found in all of the claims albeit expressed in a variety of ways and it is a feature not taught by any of the applied

references. The method also calls for relative movement between a catheter and a sheath. In general the catheter is moved into the sheath while the fluid is injected thus removing debris from the body.

## VI. ISSUES

The one issue presented for review is whether the claims are anticipated under 35 U.S.C. §102(e) by the Nash et al. reference (USPN 6,524,323) and under §102(b) by the Fischell et al. reference (USPN 5,100,425).

## VII. GROUPING OF CLAIMS

With respect to the arguments on appeal all of the claims stand or fall together as a group.

## VIII. ARGUMENT

- A. With respect to the rejection of claims 7-9, 18-24 and 27-30 under 35 U.S.C. §102(e) over Nash 6,080,170. Nash fails to show the “gap projecting said fluid jet in an initial direction away from said wall adjacent said gap, said wall serving to restrict entrainment of fluid by said primary fluid flow, thereby creating a pressure difference across said primary fluid jet flow such that said primary fluid flow turns through an angle away from said initial direction away from said wall and turns toward said wall thereby exhibiting the Coanda effect”. The method of the claim requires turning fluid using the Coanda effect and that limitation is not present in the Nash reference.
- B. With respect to Claims 7-9, 18-24 and 27-30 are rejected under 35 U.S.C. §102(b) under Fischell 5,100,425. Like Nash, Fischell is deficient in the sense that it does not teach the use of a Coanda effect geometry to guide fluid, when carrying out the method of the invention.
- C. The method of the claims calls for structures not found in the references (Coanda nozzle claim 7 and claim 28; and stent deployment balloon claim 28 ). The method calls for relative motions between physical elements not found in the references. Neither Nash nor Fischell shows the use of an angioplasty therapy balloon (claim 7) or a stent deployment balloon (claim

28) in combination with the method of fluid injection and debris recovery called for by the claims. Applicant respectfully asserts that these claims are not anticipated by the references. Applicant requests reversal of the Examiner's decision on these grounds.

Respectfully submitted,  
SPRITE SOLUTIONS  
By its attorneys:

Date: \_\_\_\_\_

A handwritten signature in black ink, appearing to read "Robert C. Beck", written over a horizontal line.

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## CLAIMS

Claims 1-6 (Canceled)

7. (Previously Amended) A method of removing particulate debris from a vessel using a catheter assembly the method comprising:

inserting and advancing a sheath having a discharge lumen to a location in the vessel said delivery sheath discharge lumen coupled to a collection vessel, said sheath not having an occlusion balloon thereon such that said sheath partially blocks the vessel but allowing some blood flow in the vessel;

inserting and advancing an interventional device to a treatment location said interventional device of type having;

an elongate body enclosing a fluid supply lumen and a angioplasty therapy inflation lumen;

an angioplasty therapy balloon for delivering angioplasty treatment located near the distal tip of said elongate body;

said elongate body having a central axis extending in the direction of the therapy balloon;

a gap communicating with said fluid supply lumen for introducing a primary fluid jet flow in said vessel, said gap located distal of said therapy balloon, said gap projecting said fluid jet in an initial direction away from the central axis of the interventional device said wall located immediately adjacent said gap, and forming an annular surface next to the gap on the interventional device;

said wall serving to restrict entrainment of fluid by said primary fluid flow, thereby creating a pressure difference across said primary fluid jet flow such that said primary fluid flow turns through an angle away from said initial direction away from said wall and turns toward said wall thereby exhibiting the Coanda effect and thereby; promoting retrograde flow into said discharge lumen.

8. (Previously presented) The method of claim 18 wherein said moving step begins near said occlusion and ends after the interventional device enters the delivery sheath.

9. (Previously presented) The method of claim 7 wherein said fluid is injected at a first injection pressure above the blood pressure in the vessel and the injected fluid pressure drop to a second exhaust pressure in said delivery catheter where said exhaust pressure is above said blood pressure, establishing a pressure gradient in said discharge lumen and promoting flow from said gap to said discharge lumen.

Claims 10-17 (Canceled)

18. (Previously presented) The method of claim 7 wherein said injection is carried out while moving said interventional device in said vessel with respect to said delivery sheath.

19. (Previously presented) The method of claim 7 wherein said discharge lumen is coupled to a syringe collection chamber.

20 (Previously presented) The method of claim 7 wherein said discharge lumen is coupled to a syringe vacuum chamber.

21. (Previously presented) The method of claim 7 wherein said primary fluid is supplied by a supply syringe chamber.

22. (Previously presented) The method of claim 21 wherein the fluid supplied is a thrombolytic.

23. (Previously presented) The method of claim 21 wherein the fluid supplied is saline.

24. (Previously presented) The method of claim 21 wherein the fluid supplied is contrast agent.

Claims 25-26 (Canceled)



27. (Previously presented) The method of claim 7 wherein said primary fluid is supplied by a supply syringe chamber and said discharge lumen is coupled to a syringe vacuum chamber, and said supply syringe and vacuum syringe are operated together to couple fluid supply with discharge lumen collection.

28. (Previously Amended) A method of removing particulate debris from a vessel using a catheter assembly the method comprising:

- inserting and advancing a sheath having a discharge lumen to a location in the vessel said delivery sheath discharge lumen coupled to a collection vessel; said sheath not having an occlusion balloon thereon such that said sheath partially blocks the vessel but allowing some blood flow in the vessel;

- inserting and advancing an interventional device to a treatment location said interventional device of type having;

- an elongate body enclosing a fluid supply lumen and a stent delivery inflation lumen;

- a stent deployment balloon for delivering stent treatment located near the distal tip of said elongate body;

- a gap communicating with said fluid supply lumen for introducing a primary fluid flow in said vessel, said gap located distal of said stent deployment balloon, said gap projecting fluid in an initial direction away from the central axis of the interventional device said wall located immediately adjacent said gap; and forming an annular surface next to the gap on the interventional device;

- said wall serving to restrict entrainment of fluid by said primary fluid flow, thereby creating a pressure difference across said primary fluid flow such that said primary fluid flow turns through an angle away from said initial direction of the toward said wall thereby exhibiting the Coanda effect thereby;

- promoting retrograde flow into said discharge lumen.

29. (Previously presented) The method of claim 28 further including a suction applied to said sheath lumen to withdraw material from said vessel.

30. (Previously presented) The method of claim 29 further including a suction applied to said sheath lumen to withdraw material from said vessel.